

We claim:

1           1.       A method of metered delivery of an insecticidal liquid in which small droplets of the  
2       liquid at an ambient temperature are ejected from a bubble-jet type liquid emanator device.

1           2.       The method of Claim 1, in which the bubble-jet liquid emanator device comprises a  
2       reservoir for containing insecticidal liquid, means for communicating the liquid from the reservoir  
3       into a capillary tube portion, and resistive heating element means for vaporizing a portion of the fluid  
4       within the capillary tube portion, thereby producing droplets of insecticidal liquid.

1           3.       The method of Claim 1 further comprising the step of vaporizing the insecticidal  
2       liquid at a temperature at least 30°C below the decomposition temperature of the insecticide therein.

1           4.       The method of Claim 1 in which a suitable gas is dissolved in the insecticidal liquid.

1           5.       The method of Claim 1 comprising a subsequent step of imparting the droplets of  
2       insecticidal liquid with a static charge.

1           6.       The method of Claim 5 wherein the static charge is about  $-1 \times 10^4 \text{C/kg}$ .

1           7.       The method of Claim 1 in which the small droplets attain a volume medium  
2       diameter of about  $1 \mu\text{m}$  to about  $7 \mu\text{m}$ .

1           8.       A method of controlling insects comprising delivery of droplets of an insecticidal  
2       liquid at an ambient temperature from a bubble-jet type liquid emanator device into the atmosphere.

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1           9.       The method of Claim 8 in which the dispersion of droplets of the insecticidal liquid  
2       is produced by controllably vaporizing a volume of the insecticidal liquid contained within a bubble-  
3       jet capillary tube portion of the emanator device.

1           10.       The method of Claim 9 in which the step of controllably vaporizing the volume of  
2       insecticidal liquid comprises activating an electronic circuit containing a resistive heating element  
3       coupled to the capillary tube portion to cause an essentially instantaneous, temporary increase in  
4       temperature of the capillary tube portion.

1           11.       A system for dispersion of droplets of an insecticidal liquid into the atmosphere  
2       comprising a bubble-jet liquid emanator device which produces droplets of insecticidal liquid at an  
3       ambient temperature.

1           12.       The system of Claim 11 in which the bubble-jet liquid emanator device comprises  
2       means for vaporizing a volume of the insecticidal liquid within one or more capillary tube portions.

1           13.       The system of Claim 13 in which the vaporizing means comprises a resistive  
2       heating element.

1           14.       The system of Claim 13 further comprising electronic control means for  
2       controlling the resistive heating element.

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1           15.       The system of Claim 14 in which the control means comprises an electrical switch  
2       means.

1           16.       The system of Claim 14 in which the control means comprises an timing circuit  
2       means.

1           17.       The system of Claim 11 further comprising reservoir means for containing a  
2       volume of the insecticidal liquid.

1           18.       An insecticidal liquid emanator device for controlling insects in an atmosphere, the  
2       liquid emanator device comprising:  
3               a reservoir for containing insecticidal fluid; and  
4               bubble-jet means for producing a plurality of droplets of the insecticidal liquid at an ambient  
5       temperature.

1           19.       The liquid emanator device of Claim 18, in which the bubble-jet means comprises  
2       a plurality of bubble-jet capillary tubes.

1           20.       The liquid emanator device of Claim 18, in which the bubble-jet means comprises  
2       a plurality of resistive heating elements coupled to the plurality of bubble-jet capillary tubes.

1           21.       The liquid emanator device of Claim 18 further comprising means for imparting a  
2       static electrical charge to the plurality of droplets of insecticidal liquid.